

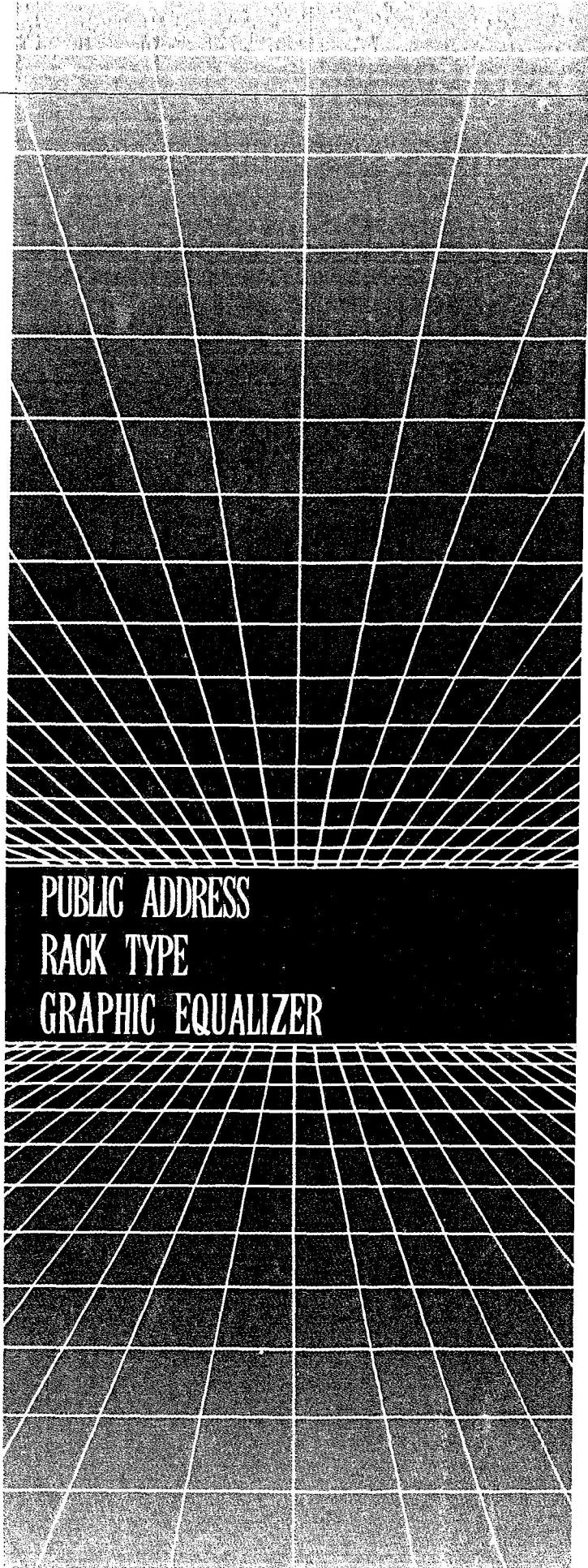
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# **SERVICE MANUAL**

**MODEL: EQ-825**

<sup>®</sup> inKEL

9007920890



# *Contents*

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|   |         |
|---|---------|
| ELECTRICAL ADJUSTMENT PROCEDURE .....       | 3       |
| SPECIFICATIONS .....                        | 3       |
| PARTS LIST .....                            | 4 · 5   |
| TOP VIEW OF P.C.BORDS .....                 | 6 · 7   |
| PARTS LIST ACCORDING TO EXPLODED VIEW ..... | 8       |
| EXPLODED VIEW OF CABINET & CHASSIS .....    | 9 · 10  |
| SCHEMATIC DIAGRAM .....                     | 11 · 12 |
| BLOCK DIAGRAM .....                         | 13      |

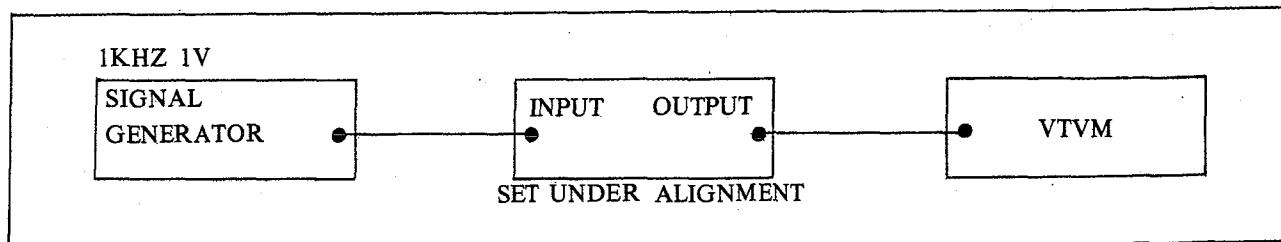
# **Electrical Adjustment Procedure**

## **1. OUTPUT LEVEL ADJUSTMENT**

### **A. SETTING**

Function Switch:EQ, DEFEAT, NOTCH OFF

### **B. CONNECTION**



### **C. ADJUSTMENT**

Apply a 1KHZ input signal of 1V.

Adjust the SVR 601 so that output voltage is 1V.

# **Specifications**

## **ELECTRICAL**

|                             |   |
|-----------------------------|---|
| Frequency Response .....    | 20Hz to 20KHz $\pm$ 1dB   |
| Input Level .....           | 0dB Balanced  |
| Impedance .....             | 8Kohm   |
| Connectors .....            | XLR Connector & PL-55 Jack  |
| Output Level .....          | 0dB Balanced  |
| Impedance .....             | 200 ohm   |
| Connectors .....            | XLR Connector & PL-55 Jack  |
| Equalizer Level .....       | $\pm$ 12dB  |
| Equalizer Frequency .....   | 20, 15, 31.5, 40, 50, 63, 80, 100, 125, 160, 200, 250,<br>315, 400, 500, 630, 800, 1K, 1.25K, 1.6K, 2K,<br>2.5K, 3.15K, 4K, 5K, 6.3K, 8K, 10K, 12.5K,<br>16K, 20K |
| Notch Frequency Range ..... | High ... 850 to 22,000Hz<br>Low ... 16 to 1,500Hz   |
| Notch Depth Control .....   | 0 to -20dB  |
| Signal to Noise Ratio ..... | More than 89dB  |
| T.H.D .....                 | Below 0.01%   |

## **GENERAL**

|                         |   |
|-------------------------|---|
| Power Requirement ..... | AC100V/120V/220V/240V, 50/60Hz          |
| Power Consumption ..... | 6W                                      |
| Dimensions .....        | 483(W) $\times$ 89(H) $\times$ 240(D)mm |
| Weight (Net) .....      | 5Kg                                     |

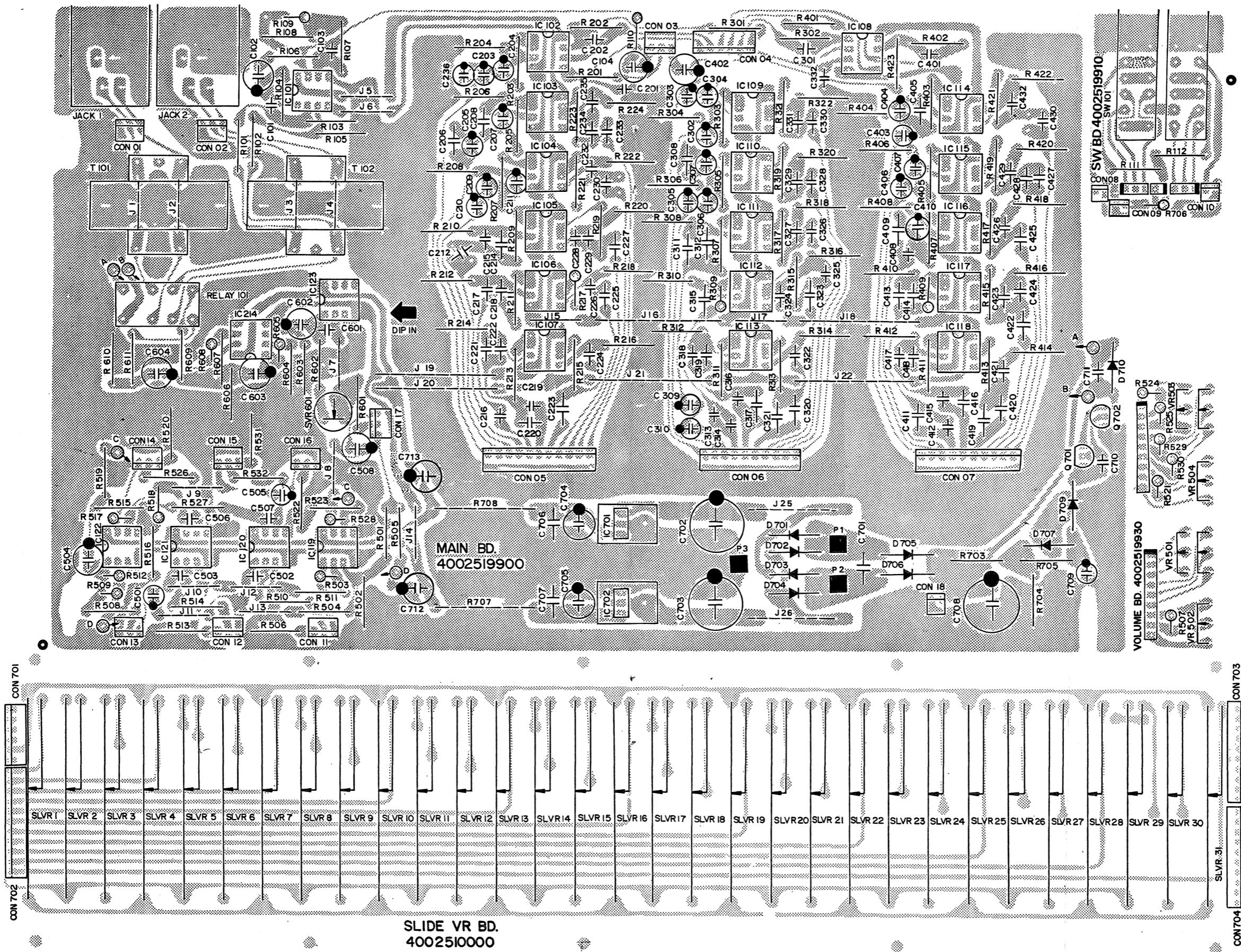
# Parts List

| Ref. No.                   | Parts. No. | Description                    | Q'ty | Ref. No.   | Parts No.  | Description                    | Q'ty |
|----------------------------|------------|--------------------------------|------|------------|------------|--------------------------------|------|
| <b>4002519901 MAIN B'D</b> |            |                                |      |            |            |                                |      |
| IC101~IC124                | 2168220100 | IC 4558P                       | 24   | R512, R517 |            |                                |      |
| IC701                      | 2168630996 | IC 7818                        | 1    | R518, R528 |            |                                |      |
| IC702                      | 2168630997 | IC 7918                        | 1    | R104       | 3009562273 | RES CF 5.6K $\frac{1}{4}$ W JN | 1    |
| D701~D706                  | 2058106100 | DIODE RECTIFIER IN4002 KEC     | 7    | R601       | 3009682273 | RES CF 6.8K $\frac{1}{4}$ W JN | 1    |
| D710                       |            |                                |      | R201, R202 | 3009103273 | RES CF 10K $\frac{1}{4}$ W JN  | 7    |
| D707, D709                 | 2058010100 | DIODE IN60                     | 2    | R301, R302 |            |                                |      |
| Q701, 702                  | 2082606107 | TR NPN 2SC 1815                | 2    | R401, R402 |            |                                |      |
| RELAY 101                  | 5528001040 | RELAY RY-24Z TAKAMISAWA        | 1    | R106       |            |                                |      |
| JACK 1, 2                  | 4438001110 | PHONE JACK(STEREO)             | 2    | R109       | 3009103275 | RES CF 10K $\frac{1}{4}$ W JR  | 1    |
| SVR 601                    | 3248322320 | RES SEMI CS 22KB 10/5          | 1    | R604       | 3009123273 | RES CF 12K $\frac{1}{4}$ W JN  | 1    |
| R701, R702                 | 3039100372 | RES M.O 10 1W                  | 2    | R408       | 3009823273 | RES CF 82K $\frac{1}{4}$ W JN  | 1    |
| R423                       | 3009100273 | RES CF 10 $\frac{1}{4}$ W JN   | 1    | R108, R204 | 3009104273 | RES CF 100K $\frac{1}{4}$ W JN | 16   |
| R100                       | 3009100275 | RES CF 10 $\frac{1}{4}$ W JR   | 1    | R210, R212 |            |                                |      |
| R609, R611                 | 3009101273 | RES CF 100 $\frac{1}{4}$ W JN  | 2    | R216, R220 |            |                                |      |
| R607, R508                 | 3009221273 | RES CF 220 $\frac{1}{4}$ W JN  | 3    | R224, R320 |            |                                |      |
| R522                       |            |                                |      | R410, R412 |            |                                |      |
| R608                       | 3009221275 | RES CF 220 $\frac{1}{4}$ W JR  | 1    | R414, R416 |            |                                |      |
| R317, R421                 | 3009331273 | RES CF 330 $\frac{1}{4}$ W JN  | 2    | R420, R422 |            |                                |      |
| R205, R207                 | 3009391273 | RES CF 390 $\frac{1}{4}$ W JN  | 5    | R603, R705 |            |                                |      |
| R319, R403                 |            |                                |      | R206, R208 | 3009124273 | RES CF 120K $\frac{1}{4}$ W JN | 13   |
| R417                       |            |                                |      | R214, R218 |            |                                |      |
| R107, R221                 | 3009471273 | RES CF 470 $\frac{1}{4}$ W JN  | 6    | R222, R308 |            |                                |      |
| R405, R415                 |            |                                |      | R312, R314 |            |                                |      |
| R419 R411                  |            |                                |      | R316, R318 |            |                                |      |
| R605                       | 3009471275 | RES CF 470 $\frac{1}{4}$ W JR  | 1    | R322, R406 |            |                                |      |
| R315, R502                 | 3009561273 | RES CF 560 $\frac{1}{4}$ W JN  | 3    | R418       |            |                                |      |
| R516                       |            |                                |      | R304, R306 | 3009154273 | RES CF 150K $\frac{1}{4}$ W JN | 4    |
| R200, R409                 | 3009561275 | RES CF 560 $\frac{1}{4}$ W JR  | 2    | R310, R404 |            |                                |      |
| R209, R213                 | 3009681273 | RES CF 680 $\frac{1}{4}$ W JN  | 9    | R606, R610 | 3009474273 | RES CF 470K $\frac{1}{4}$ W JN | 2    |
| R219, R223                 |            |                                |      | C233, C235 | 3609102120 | CAP M 0.001 $\mu$ F 100WV      | 5    |
| R303, R311                 |            |                                |      | C427, C428 |            |                                |      |
| R321, R407                 |            |                                |      | C430       |            |                                |      |
| R413                       |            |                                |      | C330, C420 | 3609122120 | CAP M 0.0012 $\mu$ F 100W V    | 2    |
| R217                       | 3009681275 | RES CF 680 $\frac{1}{4}$ W JR  | 1    | C230, C331 | 3609152120 | CAP M 0.0015 $\mu$ F 100W V    | 4    |
| R203, R211                 | 3009821273 | RES CF 820 $\frac{1}{4}$ W JN  | 6    | C506, C507 |            |                                |      |
| R215, R305                 |            |                                |      | C228, C229 | 3609222120 | CAP M 0.0022 $\mu$ F 100W V    | 5    |
| R307, R313                 |            |                                |      | C219, C320 |            |                                |      |
| R309                       | 3009821275 | RES CF 820 $\frac{1}{4}$ W JR  | 1    | C328       |            |                                |      |
| R704                       | 3009102273 | RES CF 1K $\frac{1}{4}$ W JN   | 1    | C325       | 3609252120 | CAP M 0.0025 $\mu$ F 100W V    | 1    |
| R105, R602,                | 3009122273 | RES CF 1.2K $\frac{1}{4}$ W JN | 6    | C232, C432 | 3609272120 | CAP M 0.0027 $\mu$ F 100W V    | 2    |
| R506, R513                 |            |                                |      | C227, C415 | 3609332120 | CAP M 0.0033 $\mu$ F 100W V    | 3    |
| R520, R531                 |            |                                |      | C425       |            |                                |      |
| R103                       | 3009152273 | RES CF 1.5K $\frac{1}{4}$ W JN | 1    | C326, C429 | 3609392120 | CAP M 0.0039 $\mu$ F 100W V    | 2    |
| R101, R102                 | 3009392273 | RES CF 3.9K $\frac{1}{4}$ W JN | 2    | C316, C412 | 3609472120 | CAP M 0.0047 $\mu$ F 100WV     | 2    |
| R501, R504                 | 3009472273 | RES CF 4.7K $\frac{1}{4}$ W JN | 13   | C225, C234 | 3609562120 | CAP M 0.0056 $\mu$ F 100W V    | 2    |
| R505, R511                 |            |                                |      | C329, C422 | 3609682120 | CAP M 0.0068 $\mu$ F 100W V    | 2    |
| R514, R515                 |            |                                |      | C226, C323 | 3609822120 | CAP M 0.0082 $\mu$ F 100W V    | 3    |
| R519, R523                 |            |                                |      | C424       |            |                                |      |
| R526, R527                 |            |                                |      | C423, C426 | 3609103120 | CAP M 0.01 $\mu$ F 100W V      | 3    |
| R532, R510                 |            |                                |      | C711       |            |                                |      |
| R703                       |            |                                |      | C223, C419 | 3609123120 | CAP M 0.012 $\mu$ F 100W V     | 2    |
| R503, R509                 | 3009472275 | RES CF 4.7K $\frac{1}{4}$ W JR | 6    | C224, C321 | 3609153120 | CAP M 0.015 $\mu$ F 100W V     | 4    |
|                            |            |                                |      | C324, C327 |            |                                |      |
|                            |            |                                |      | C221, C222 | 3609183120 | CAP M 0.018 $\mu$ F 100W V     | 3    |

| Ref No.    | Parts No.  | Description                | Q'ty |
|------------|------------|----------------------------|------|
| C322, C416 | 3609223120 | CAP M 0.022 $\mu$ F 100W V | 4    |
| C502, C503 |            |                            |      |
| C314, C317 | 3609273120 | CAP M 0.027 $\mu$ F 100W V | 4    |
| C319, C421 |            |                            |      |
| C217, C218 | 3609333120 | CAP M 0.033 $\mu$ F 100W V | 5    |
| C318, C418 |            |                            |      |
| C313       |            |                            |      |
| C216, C411 | 3609473120 | CAP M 0.047 $\mu$ F 100W V | 3    |
| C417       |            |                            |      |
| C206, C409 | 3609563120 | CAP M 0.056 $\mu$ F 100W V | 3    |
| C413       |            |                            |      |
| C215, C308 | 3609683120 | CAP M 0.068 $\mu$ F 100W V | 3    |
| C408       |            |                            |      |
| C212, C311 | 3609823210 | CAP M 0.082 $\mu$ F 100W V | 5    |
| C315, C405 |            |                            |      |
| C414       |            |                            |      |
| C208, C214 | 3609104120 | CAP M 0.1 $\mu$ F 100W V   | 6    |
| C312, C701 |            |                            |      |
| C706, C707 |            |                            |      |
| C101       | 3509270130 | CAP C 27PF 50W V           | 1    |
| C103       | 3509470130 | CAP C 47PF 50W V           | 1    |
| C202, C301 | 3509151130 | CAP C 150PF 50W V          | 4    |
| C332, C401 |            |                            |      |
| C201, C710 | 3509221130 | CAP C 220PF 50W V          | 2    |
| C601       | 3509271130 | CAP C 270PF 50W V          | 1    |
| C702, C703 | 3409247161 | CAP E 470 $\mu$ F 35V      | 2    |
| C102, C104 | 3409210141 | CAP E 100 $\mu$ F 25V      | 12   |
| C402, C504 |            |                            |      |
| C508, C602 |            |                            |      |
| C603, C604 |            |                            |      |
| C704, C705 |            |                            |      |
| C712, C713 |            |                            |      |
| C708       | 3409247061 | CAP E 47 $\mu$ F 35V       | 1    |
| C709       | 3409222041 | CAP E 22 $\mu$ F 25V       | 1    |
| C501, C505 | 3409210061 | CAP E 10 $\mu$ F 35V       | 2    |
| C304       | 3409233971 | CAP E 3.3 $\mu$ F 50V      | 1    |
| C204, C207 | 3409210971 | CAP E 1 $\mu$ F 50V        | 5    |
| C303, C306 |            |                            |      |
| C404       |            |                            |      |
| C203, C209 | 3409247871 | CAP E 0.47 $\mu$ F 50V     | 5    |
| C211, C302 |            |                            |      |
| C407       |            |                            |      |
| C305, C309 | 3409233871 | CAP E 0.33 $\mu$ F 50V     | 3    |
| C403       |            |                            |      |
| C205, C210 | 3409222871 | CAP E 0.22 $\mu$ F 50V     | 7    |
| C236, C307 |            |                            |      |
| C310, C406 |            |                            |      |
| C410       |            |                            |      |
| CON18      | 4428501010 | CONNECTOR WAFER LW2P       | 1    |
| CON01~03   | 4428598320 | CONNECTOR WAFER LW3P       | 10   |
| CON11~17   |            |                            |      |
| CON04      | 4428598350 | CONNECTOR WAFER LW 6P      | 1    |
| CON06, 07  | 4428598390 | CONNECTOR WAFER LW 10P     | 2    |
| CON05      | 4428598311 | CONNECTOR WAFER LW 11P     | 1    |

| Ref No.                            | Parts No.  | Description   | Q'ty                       |
|------------------------------------|--|---|----------------------------|
| P1~P3                              | 4355997230<br>4225000314<br>7505200710<br>8019230081<br>8319130011<br>4855000111 | CONNECTOR ASS'Y(3P)<br>PIN WRAPPING<br>HEAT SINK(REGULATOR TR.)<br>SCREW #2 PTC 3×8Y<br>SPRING WASHER(Φ3)<br>CERAMIC PIPE | 2<br>3<br>2<br>4<br>2<br>4 |
| <b>4002519910 SUB SWITCH B'D</b>   |  |   |                            |
| VR501                              | 3208097410   | VR Φ16 100KB×2 (15mm)   | 1                          |
| VR503                              | 3208097310   | VR. Φ16 200KB×2(15mm)   | 1                          |
| VR502, 504                         | 3208097710   | VR. Φ16 10KB(15mm)  | 2                          |
| R524, R525                         | 3009273275   | RES CF 27K 1/4W JR  | 4                          |
| R529, R530                         | 3009222275   | RES CF 2.2K 1/4W JR   | 2                          |
| R507, R521                         | 4355985730   | CONNECTOR ASS'Y 3P(450mm)   | 6                          |
| <b>4002519930 SUB VOLUME B'D</b>   |  |   |                            |
| SW101                              | 4628995810   | SW. PUSH P12.5 4×4  | 1                          |
| D708                               | 2308060104   | LED KLR208E 2×5 RD  | 1                          |
| D711, D713                         | 2308220118   | LED SLR-34 UR3  | 2                          |
| R111, R112                         | 3009103273   | RES CF 10K 1/4W JN  | 2                          |
| R706                               | 3009202275   | RES CF 2K 1/4W JR   | 1                          |
| CON8~10                            | 4428501010   | CONNECTOR WAFER LW 2P   | 3                          |
|                                    | 4353997120   | CONNECTOR ASS'Y 2P(200mm)   | 1                          |
|                                    | 4353997130   | CONNECTOR ASS'Y 2P(80mm)  | 2                          |
|                                    | 4355974110   | CONNECTOR ASS' 4P(400mm)  | 1                          |
|                                    | 4355974010   | CONNECTOR ASS'Y 4P(450mm)   | 1                          |
| <b>4002510000 SLIDE VOLUME B'D</b> |  |   |                            |
| SLVR1~31                           | 3238097910   | SL VR 50KW L45  | 31                         |
| CON701                             | 4428598350   | CONNECTOR WAFER LW 6P   | 1                          |
| CON703,                            | 4428598390   | CONNECTOR WAFER LW 10P  | 2                          |
| CON704                             |  |   | 1                          |
| CON702                             | 4428598311   | CONNECTOR WAFER LW 11P  | 1                          |
|                                    | 4355977910   | CONNECTOR ASS'Y 6P  | 1                          |
|                                    | 4355977810   | CONNECTOR ASS'Y 10P(A)  | 1                          |
|                                    | 4355977710   | CONNECTOR ASS'Y 10P (B)   | 1                          |
|                                    | 4355977610   | CONNECTOR ASS'Y 11P   | 1                          |
| PRIMARY FUSE                       | 5508211230   | NB 31.8mm 0.25A/250V KS<br>FOR KS   | 1                          |
| PRIMARY FUSE                       | 5508211230   | NB 31.8mm 0.25A/250V KS<br>FORUL CSA  | 1                          |
| PRIMARY FUSE                       | 5508210930   | NB 31.8mm 0.15A/250V KS<br>FOR G-EUROPE   | 1                          |
| PRIMARY FUSE                       | 5508210930   | NB 31.8mm 0.15A/250V KS<br>FOR BSI  | 1                          |

## *Top View of P.C. Boards*

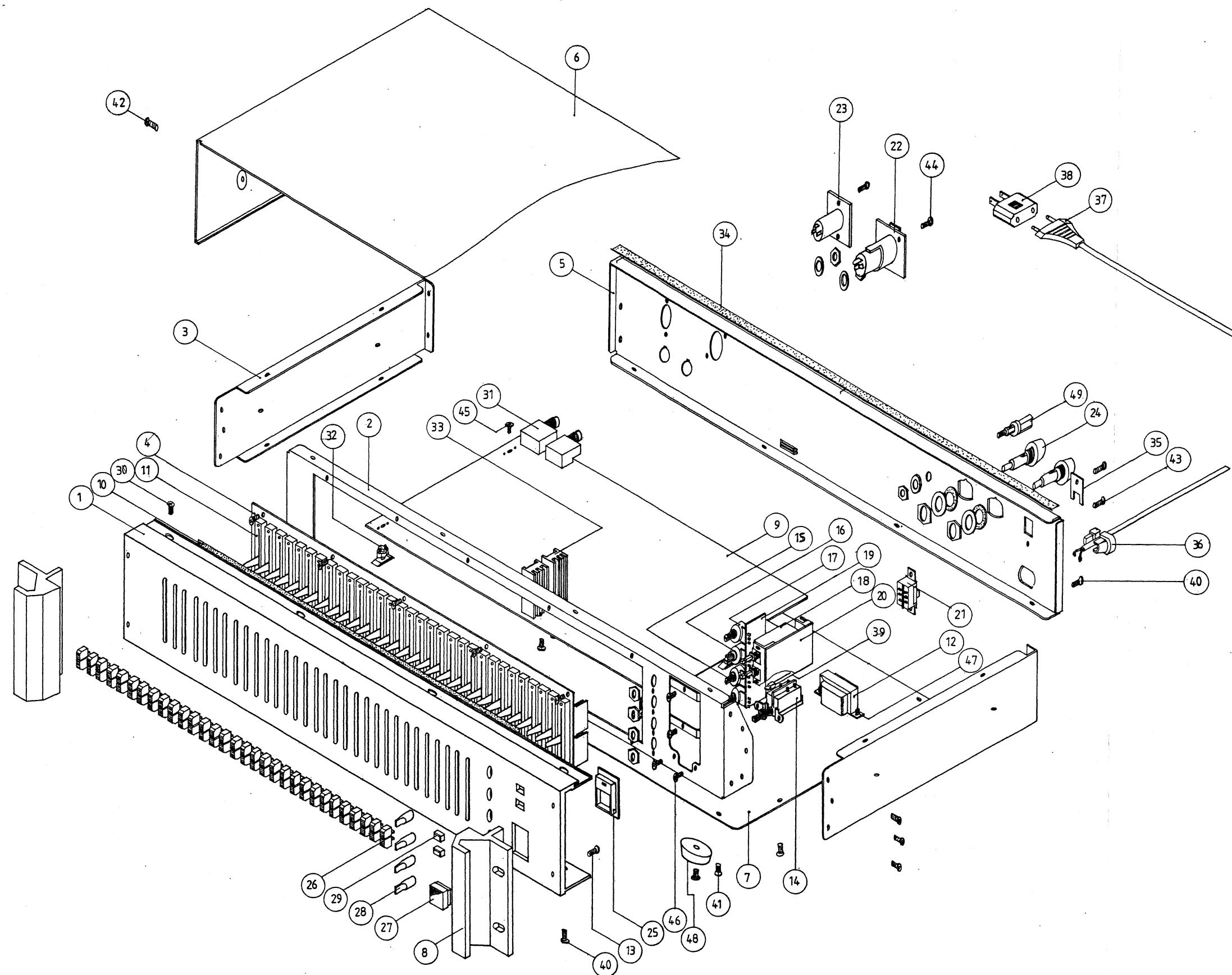


## *Parts List According to Exploded View*

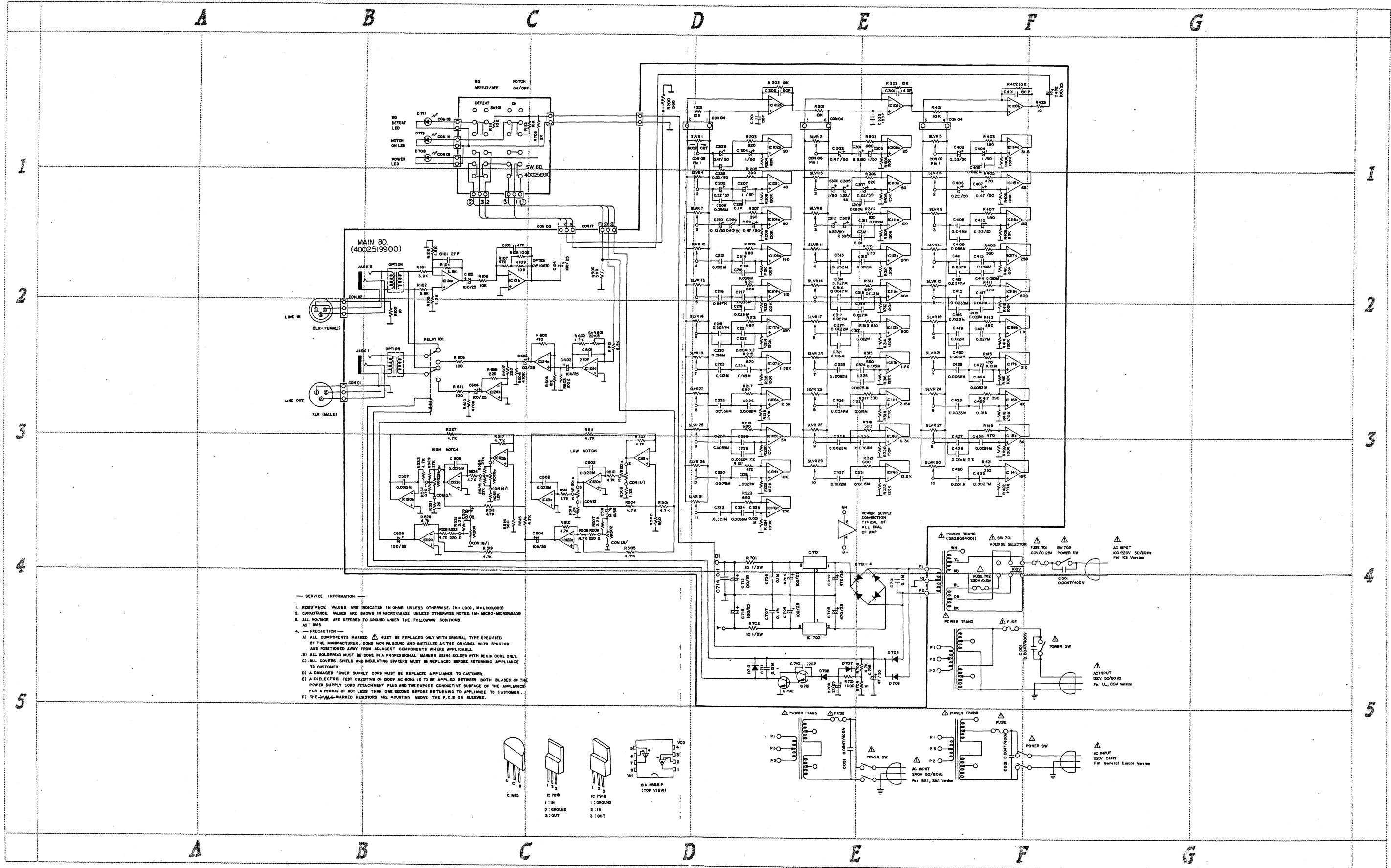
| No.  | Description       | Parts No.    | Q'ty | Remarks                 |
|------|-------------------|--------------|------|-------------------------|
| 1    | FRONT PANEL       | 8602992110   | 1    |                         |
| 2    | FRONT CHASSIS     | 6122492110   | 1    |                         |
| 3    | FRAME SIDE        | 6123699320   | 2    |                         |
| 4    | SLIDE VR P·C·B    | 4002510000   | 1    |                         |
| 5    | BACK CHASSIS      | 6102993211   | 1    | FOR KS                  |
| 5-1  | BACK CHASSIS      | 046102993223 | 1    | FOR UL,CSA              |
| 5-2  | BACK CHASSIS      | 04510299322  | 1    | FOR G EUROPE            |
| 5-3  | BACK CHASSIS      | 046102993231 | 1    | FOR BSI                 |
| 6    | COVER TOP         | 6121099910   | 1    |                         |
| 7    | COVER BOTTOM      | 6122492010   | 1    |                         |
| 8    | RACK MOUNT BASE   | 8603999210   | 2    |                         |
| 9    | MAIN P·C·B        | 4002519900   | 1    |                         |
| 10   | STRIP FELT        | 3733999310   | 1    |                         |
| 11   | SLIDE VR 50KW L45 | 6238097910   | 31   |                         |
| 12   | POWER TRANS       | 2828094000   | 1    |                         |
| 13   | SCREW BM4×10Y     | 8009140101   | 4    |                         |
| 14   | POWER SWITCH      | 4628005410   | 1    | FOR KS,BSI G.EUR        |
| 14-1 | POWER SWITCH      | 4628004710   | 1    | FOR UL,CSA              |
| 15   | VR φ16 100KB×2    | 3268097410   | 1    |                         |
| 16   | VR φ16 10KB       | 3268097710   | 2    |                         |
| 17   | VR φ16 200KB×2    | 3268097310   | 1    |                         |
| 18   | PUSH SWITCH       | 4628995810   | 1    |                         |
| 19   | VOLUME P·C·B      | 4002519930   | 1    |                         |
| 20   | SWITCH P·C·B      | 4002519910   | 1    |                         |
| 21   | SELECTOR SWITCH   | 4618000410   | 1    | FOR KS                  |
| 22   | XLR CONNECTOR     | 4358999510   | 1    |                         |
| 23   | XLR CONNECTOR     | 4358999610   | 1    |                         |
| 24   | FUSE HOLDER       | 4458000220   | 2    | FOR KS                  |
| 24-1 | FUSE HOLDER       | 4458000210   | 2    | FOR UL,CSA G-EUROPE,BSI |
| 25   | BEZEL PUSH        | 8523999610   | 1    |                         |
| 26   | SLIDE KNOB        | 8543002912   | 31   |                         |
| 27   | PUSH KNOB         | 8545998710   | 1    |                         |
| 28   | VOLUME KNOB       | 8545010210   | 4    |                         |
| 29   | PUSH KNOB         | 8545998510   | 2    |                         |

## *Exploded View of Cabinet & Chassis*

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## *Schematic Diagram*



# Block Diagram

